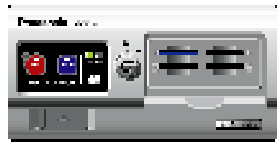


**Arbitrator 360**  
**Hardware Installation ver 2.4**  
**(Distribution Center version)**

# 1. Arbitrator Units and Cables

## AG-CPD20P



Recorder (VPU)

## RP-SDW32GP1K



32GB SDHC Card

## AG-CK10P



Camera



Camera Mount



Camera Cable  
(Short)



Camera Cable  
(Long)

## PAPDC2462-2859



GPS Antenna



Power Cable  
for Recorder



Power  
Distribution Box



External GPIO  
Trigger Cable



LAN Cable  
(Crossing type)

## TT-ARBM56P06



3<sup>rd</sup>-6<sup>th</sup> Camera

## A360-WLSAP-BWT



AP-WiFi-Modem

## CCR24PNA



Digital Wireless  
Mic Receiver &  
Transmitter



In Car Mic



Receiver Cable

## OPTIONS

## AG-RCP30P



Control Panel



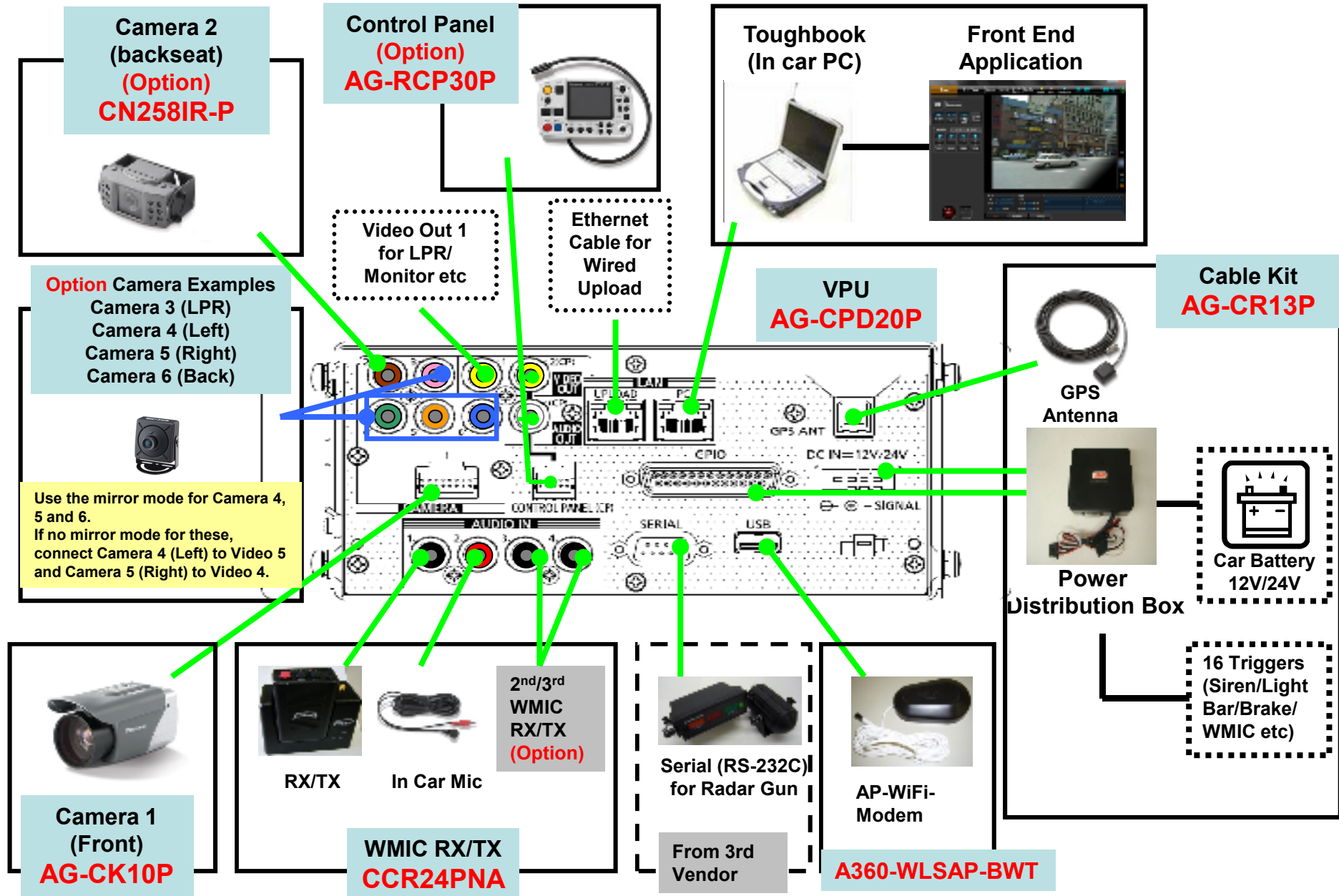
Control Panel  
Cable

## CN258IR-P

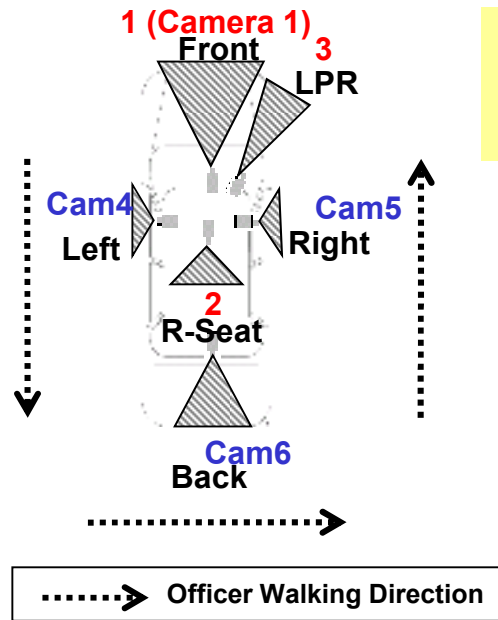


2<sup>nd</sup> Backseat  
Camera

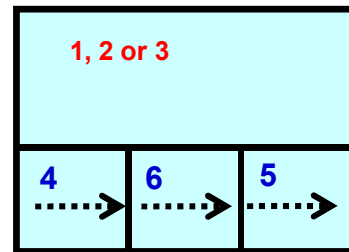
## 2. Arbitrator in-car System Configuration



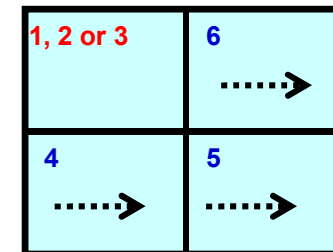
# Appendix: Camera 4, 5 and 6 video image and connection



If Left Camera (Cam4), Right Camera (Cam5) and Back Camera (Cam6) have the Mirror mode, Connect Cam 4 to the “video in 4”, Cam5 to “video in 5” and Cam6 to “video in 6”



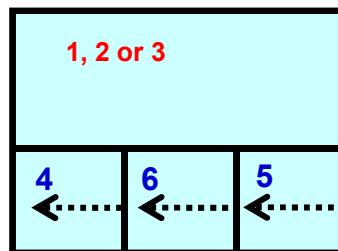
Cam4 Cam5



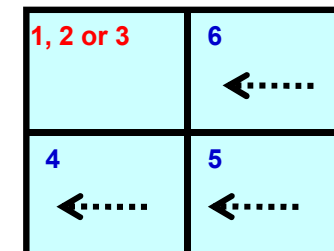
Cam4 Cam5

Image will be moved 4, 6, 5 in order from left to right.

If Left Camera (Cam4), Right Camera (Cam5) and Back Camera (Cam6) **do NOT** have the Mirror mode, Connect Cam 4 to the “video in 5”, Cam5 to “video in 4” and Cam6 to “video in 6”



Cam5 Cam4



Cam5 Cam4

Image will be moved 5, 6, 4 in order from right to left.



### 3. Install VPU using Mounting Bracket

1. To center console



2. To trunk



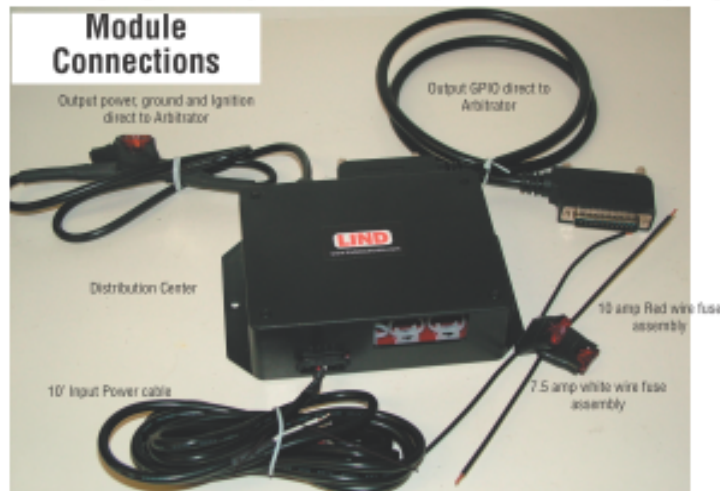
## 4. Power cable harness for VPU, Wireless MIC and 2<sup>nd</sup> camera (Distribution Center)

### Operating Instructions:

This LIND distribution center is supplied with the GPIO cable, an input power cable, and two in-line fuse holders with fuses. The 10 amp fuse assembly is for the red input wire from the battery and the 7.5 amp fuse assembly is for the white input ignition connection. Reference Arbitrator operators manual for additional instructions.

**Input power cable must be connected direct to the main battery with the positive (red) connected through a 10 Amp in line fuse. Locate the fuse within 5" of the main battery connection to protect against cable shorts.**

- Remove the distribution center four cover screws and cover.
- Route GPIO connections to desired J1 connections through the cable ties and sinch for strain relief. Reference Figure 1 for J1 connections to J2 GPIO cable interface.
- Route auxiliary camera power leads and wireless microphone connections to J3 power limited connections through cable ties and sinch for strain relief. (3 amp maximum available)
- Ignition connections available at J5 pin 1 and J5 pin 2.
- Route optional ignition connections to J5 through the cable ties and sinch for strain relief.
- J6 has a jumper installed connecting the signal return to the power return.
- Move jumper to J7 place holder if power and signal returns need isolating.
- Connect input power cable power, ground, and ignition wires. The positive red wire connects direct to the battery through the 10 amp in-line fuse assembly. The ignition white wire connects through the 7.5 amp fuse assembly to a switched ignition connection. Connect the black lead direct to the battery ground.
- Install the distribution center cover and four screws.
- Connect the output power and GPIO cables direct to the Arbitrator VPU.
- A 5 volt active high signal on J1 pin 24 (VPU GPO4) enables the J3 auxiliary outputs.



### DISTRIBUTION CENTER INSTALLATION CONNECTIONS

\* Suggested connections

J2 VPU	>>>	J1 INPUT	J3 AUXILIARY
*GPI1 (WIRELESS Mc)		J1-1	+ J3-1
*GPI2 (LIGHT BAR)		J1-2	+ J3-3
*GPI3 (BRAKE IND.)		J1-3	+ J3-5
*GPI4 (SIREN IND.)		J1-4	+ J3-7
*GPI5 (GUN LOCK)		J1-5	+ J3-9
*GPI6 (WIRELESS MC)		J1-6	+ J3-11
*GPI7 (MUTE INDICATOR)		J1-7	+ J3-13
GPI8 (OTHER)		J1-8	+ J3-15
GPI9 (OTHER)		J1-9	- J3-2
GPI10 (OTHER)		J1-10	- J3-4
GPI11 (OTHER)		J1-11	- J3-6
GPI12 (OTHER)		J1-12	- J3-8
GPI13 (OTHER)		J1-13	- J3-10
GPI14 (OTHER)		J1-14	- J3-12
GPI15 (RADAR/GPS)		J1-15	- J3-14
GPI16 (RADAR/GPS)		J1-16	- J3-16
	NC	J1-17	
	NC	J1-18	
	NC	J1-19	
	NC	J1-20	
GPO1 (OPEN EMITTER)		J1-21	
GPO2 (OPEN EMITTER)		J1-22	
GPO3 (OPEN COLLECTOR)		J1-23	
GPO4 (5 VOLT OUTPUT)		J1-24	
	Signal return	J1-25	
	Signal return	J1-26	

J5 IGNITION  
CONNECTIONS  
(OPTIONAL)

IGN J5-1  
IGN J5-2

J6



Remove Jumper to isolate  
Signal return from Power ground

J7



Place holder when  
Jumper is not used

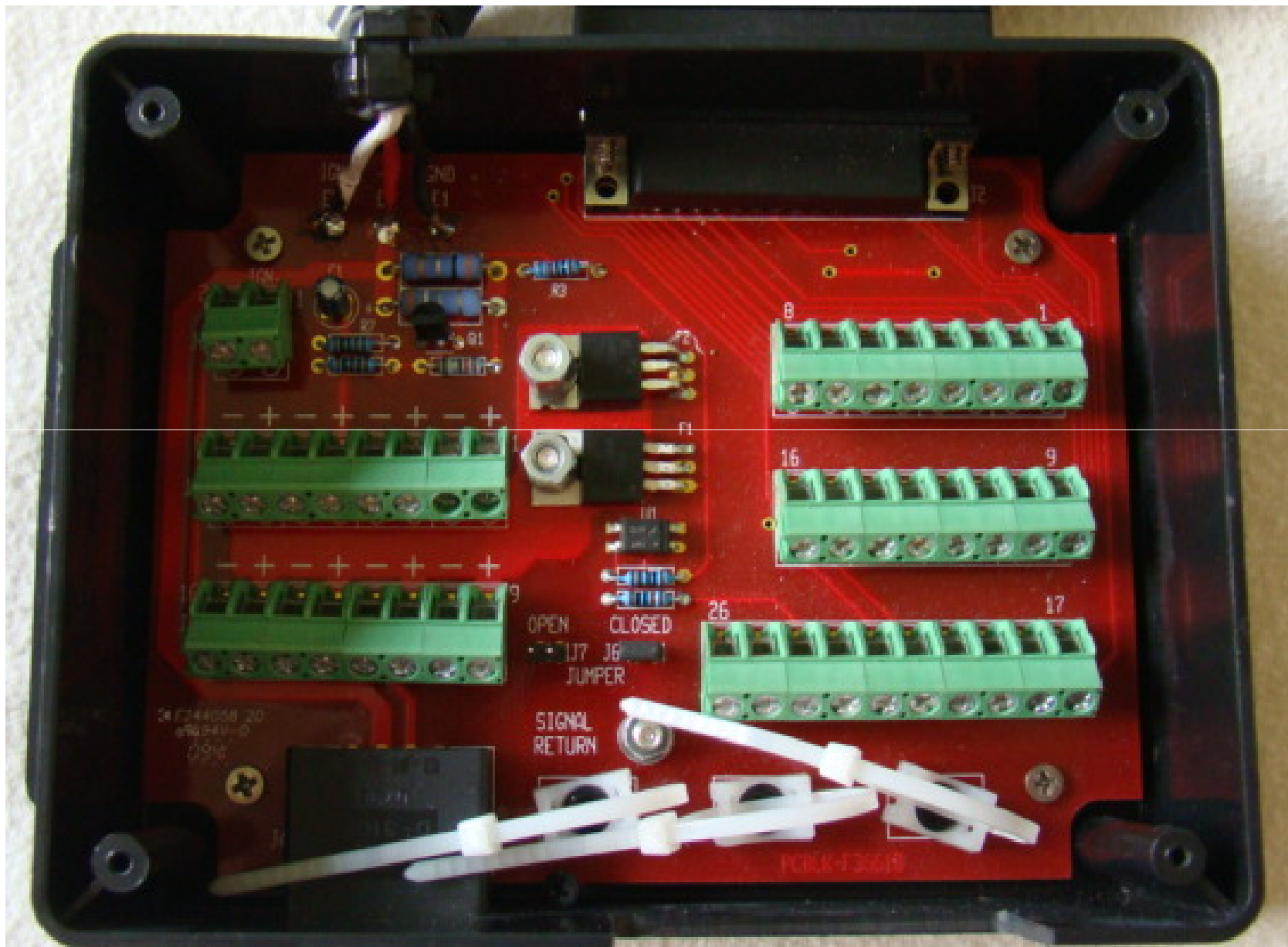
J1-24 GPO4, 5V CONNECTION  
ENABLES AUXILIARY POWER  
CONNECTIONS

NOTE: AUXILIARY POWER TURNS OFF WHEN VPU IS OFF.

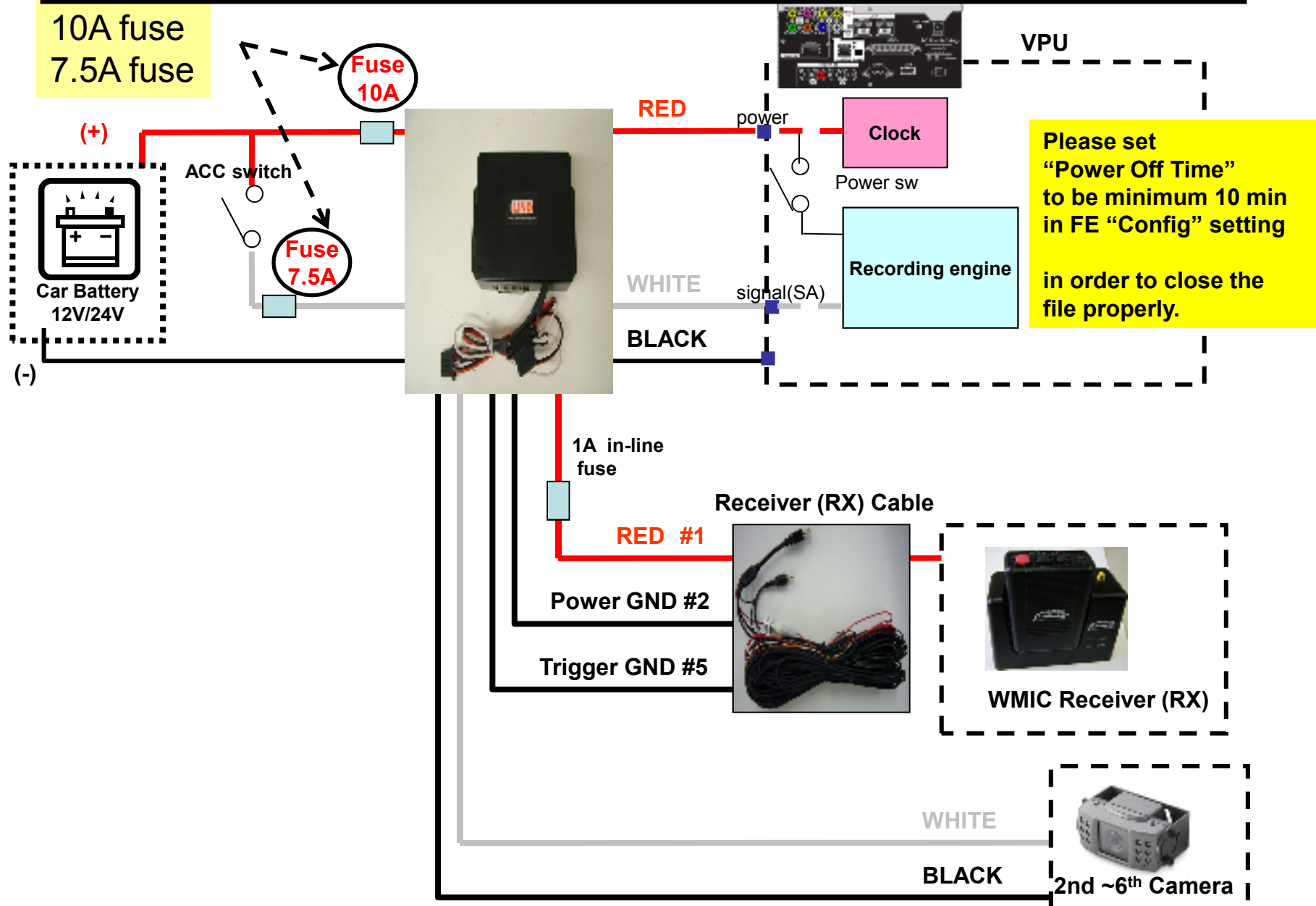
### Technical Information

- Input:  
Power Output to VPU :  
Auxiliary power:  
Main Fuse:  
Ignition Fuse:  
Dimensions:
- 12 - 16VDC 10 amp maximum
  - 12 - 16VDC 7.5 amp maximum
  - 12 - 16VDC 2.5 amp maximum
  - 10 amp ATO blade fuse (Replace with same type and rating fuse)
  - 7.5 amp ATO blade fuse (Replace with same type and rating fuse)
  - 6.5" x 4.35" x 1.75"

#### 4. Power cable harness for VPU, Wireless MIC and 2<sup>nd</sup> camera (Distribution Center inside picture)



## 4-1. Power cable harness for VPU, Wireless MIC and 2<sup>nd</sup> camera (Distribution Center)



## 4-2. GPIO Trigger for 16 GPIs

Distribution Center



Signal	Remark	J1 Input #	Trigger Name (Example)
GPI 1	In	J1-1	Wireless Mic
GPI 2	In	J1-2	Light Bar
GPI 3	In	J1-3	Brake Indicator
GPI 4	In	J1-4	Siren Indicator
GPI 5	In	J1-5	Gun Lock
GPI 6	In	J1-6	Wireless Mic Active indicator (H)
GPI 7	In	J1-7	Wireless Mic Mute indicator (H)
GPI 8	In	J1-8	Other
GPI 9	In	J1-9	Other
GPI 10	In	J1-10	Other
GPI 11	In	J1-11	Other
GPI 12	In	J1-12	Other
GPI 13	In	J1-13	Other
GPI 14	In	J1-14	Other
GPI 15	In	J1-15	Own(REC) / TGT(REC) (when connecting Radar/GPS)
GPI 16	In	J1-16	Own(REC) / TGT(REC) (when connecting Radar/GPS)
GPO 1	Out	J1-21	Open Emitter (Rec, Error, Rec+Error: Active 5V 15mA)
GPO 2	Out	J1-22	Open Emitter (Rec, Error, Rec+Error: Active 5V 15mA)
GPO 3	Out	J1-23	Open Collector (Rec : Active L)
GPO 4	Out	J1-24	+5V out

GPI 1~16    L : not more than 1.0V    H: 4 V to 28V    Input current max. 12mA

## 4-3. GPIO Trigger for 16 GPIOs Blank Sheet

Distribution Center



Signal	Remark	J1 Input #	Trigger Name (Example)
GPI 1	In	J1-1	
GPI 2	In	J1-2	
GPI 3	In	J1-3	
GPI 4	In	J1-4	
GPI 5	In	J1-5	
GPI 6	In	J1-6	
GPI 7	In	J1-7	
GPI 8	In	J1-8	
GPI 9	In	J1-9	
GPI 10	In	J1-10	
GPI 11	In	J1-11	
GPI 12	In	J1-12	
GPI 13	In	J1-13	
GPI 14	In	J1-14	
GPI 15	In	J1-15	
GPI 16	In	J1-16	
GPO 1	Out	J1-21	
GPO 2	Out	J1-22	
GPO 3	Out	J1-23	
GPO 4	Out	J1-24	

GPI 1~16    L : not more than 1.0V    H: 4 V to 28V    Input current max. 12mA

## **5. Wireless Mic Receiver Connection to VPU**

1. Besides power and GND lines, there are three trigger lines.  
See the chart and connect each line properly to the GPI inputs.
2. Trigger GND (#5) and power GND (#2) must be directly connected to the Distribution Center.



## 5-1. Wireless Mic Receiver Connection to VPU



Digital Wireless Mic Receiver & Transmitter



Receiver (RX)

Distribution Center



DC Power (RED) #1  
To J3 + terminal  
Power GND (Black) #2  
To J3 - terminal

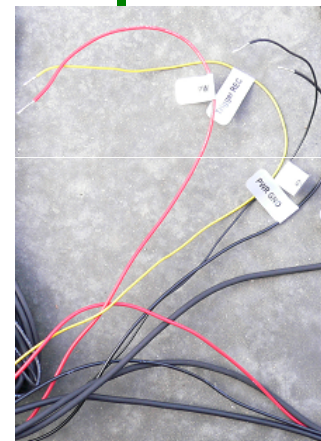


Receiver (RX) Cable



To Receiver Jack

To Audio In 1



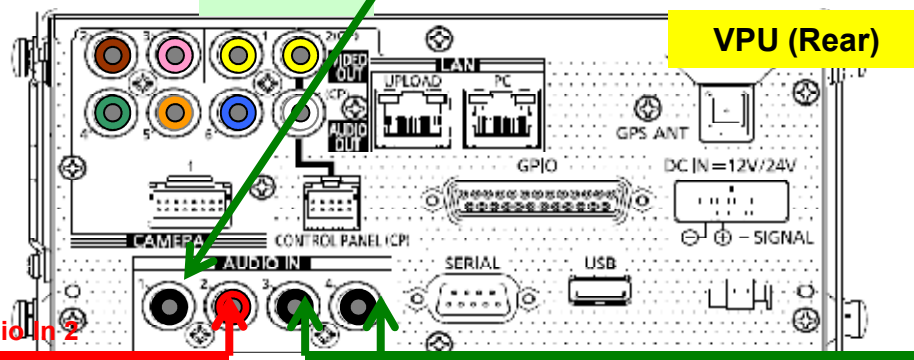
Recording Trigger (Brown) #7  
TX indication (Orange) #6  
Mute indication (white) #8  
-> Distribution Center

Trigger GND (Black) #5  
To Distribution Center



In Car Mic

To Audio In 2



VPU (Rear)

To Audio In 3 and 4

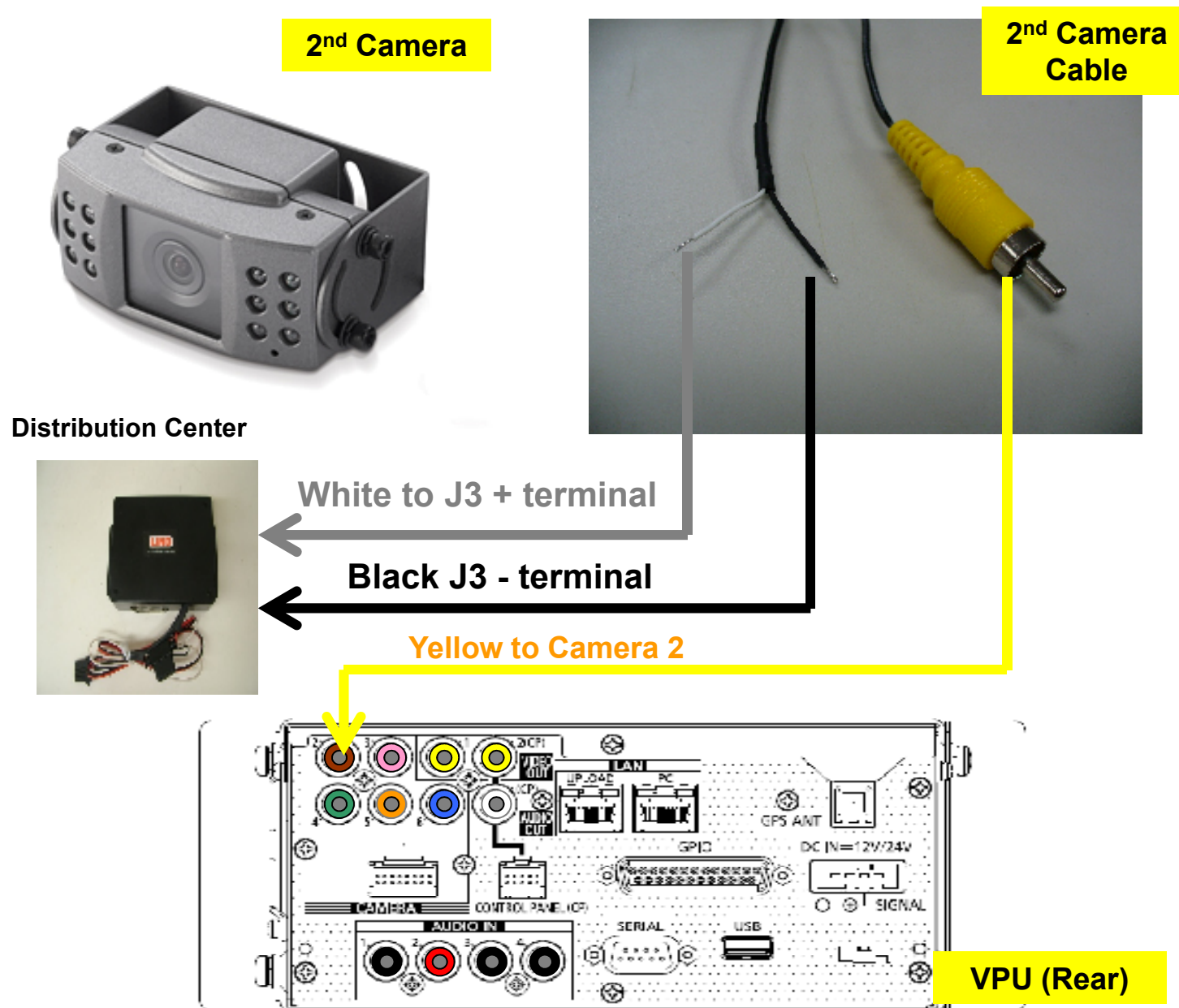
2nd / 3rd Wireless Mic Receiver (optional)



## **6. 2<sup>nd</sup> Rearseat Camera (Option:CN258IR-P) Connection to VPU**

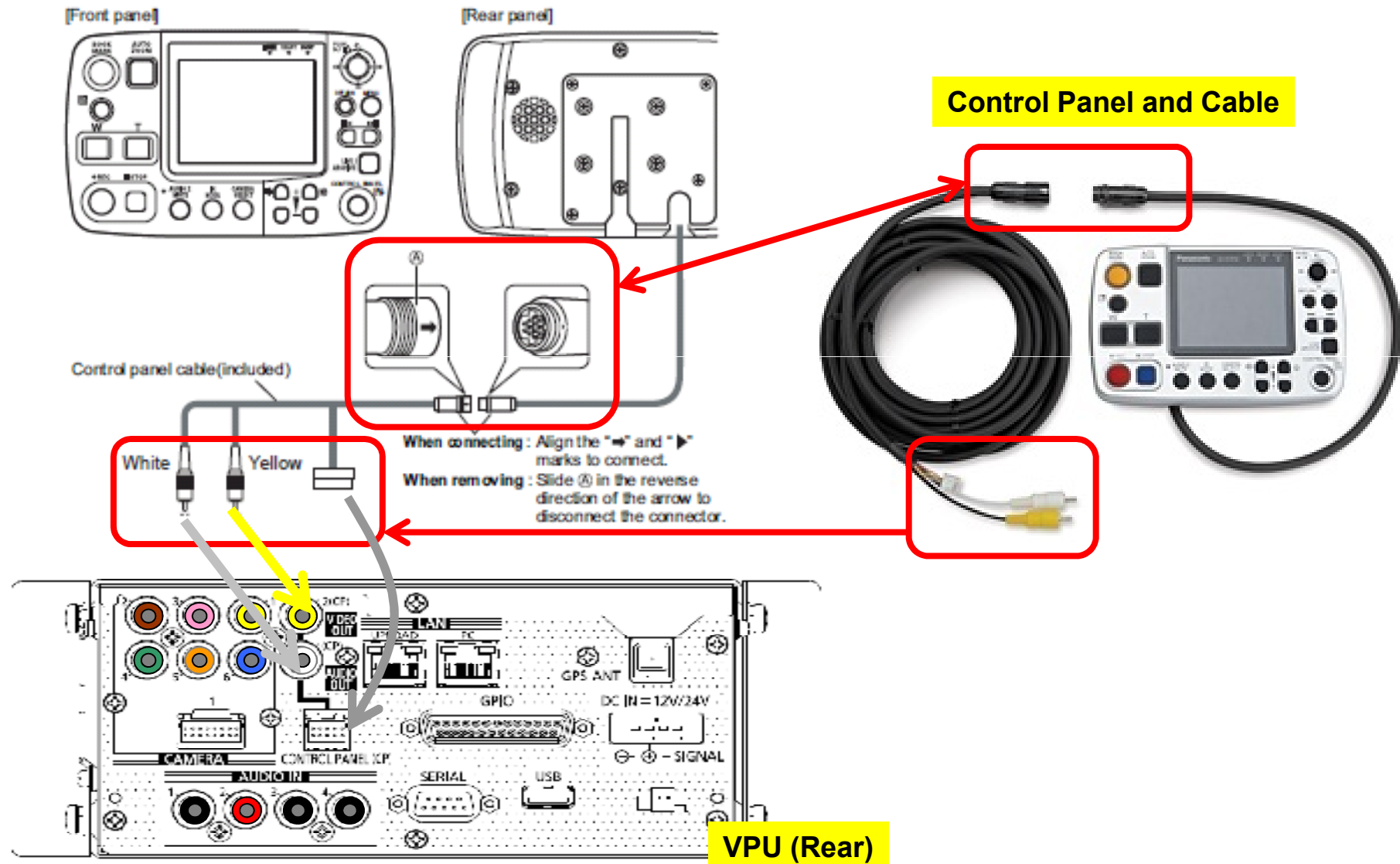
1. Backseat camera video output must be connected to Camera2 input in VPU
2. Power line (white) must be connected to Distribution Center.  
Power GND (black) must be directly connected to the Distribution Center.

## 6-1. 2<sup>nd</sup> backseat Camera (Option:CN258IR-P) Connection to VPU



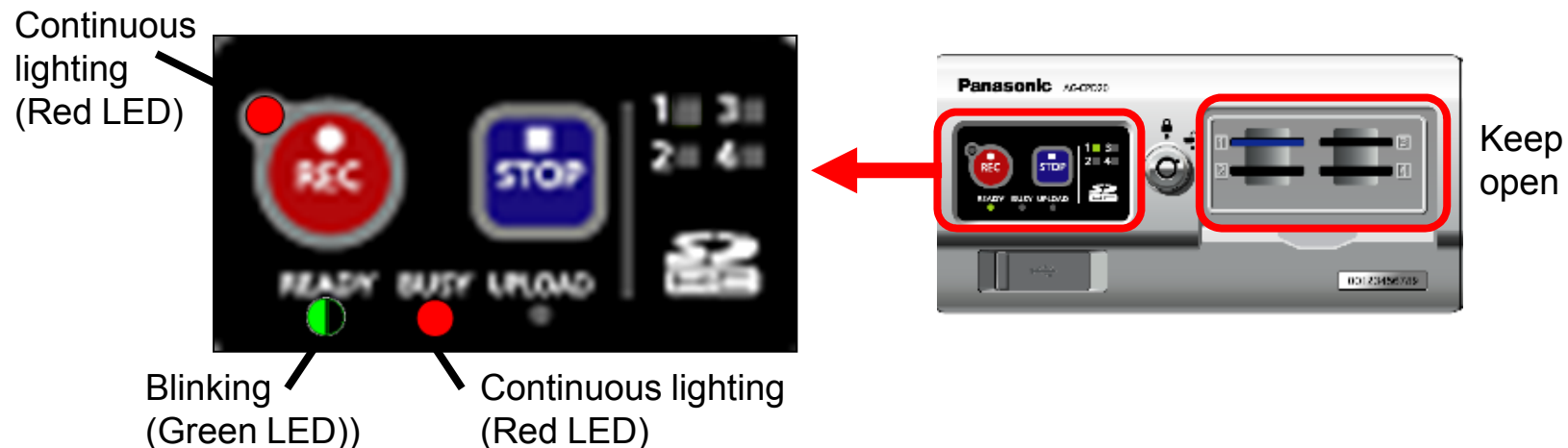
## 7. Control Panel (Option: AG-RCP30P) Connection to VPU

### Control Panel



## 8. Update Firmware by SDHC card/USB key

1. Put vup file (firmware) right under root directory in SDHC card or USB drive. Don't put any other folders / files.
2. Keep open the door and insert SDHC card or connect USB drive.
3. While pressing STOP button, turn power on, then keep pressing STOP button for another 30 sec.
4. VPU starts updating firmware, see the LEDs (below).
5. Once it's finished (takes about 4 min), VPU reboots itself.



# Appendix

## External GPIO Trigger (External LED)

If the Officer would like to see the REC/Error status from inside of vehicle additionally, it is possible to set up the LED light connecting to GPIO

**Radioshack Part# 276-011**

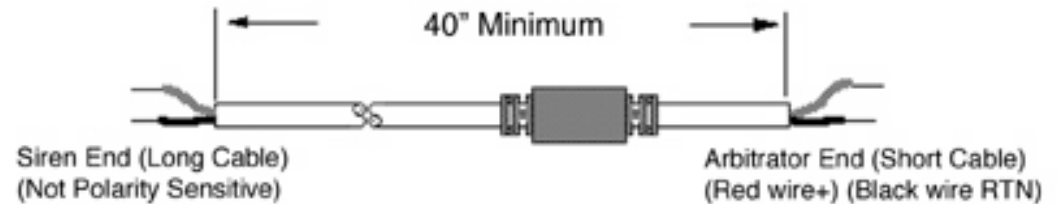
- Lens size is 5mm
- Red diffused lens color
- Viewing angle is 60°
- 30mA (max)
- Typical Voltage is 12, with a maximum voltage of 12V
- One per package
- Mfg hole diameter is 5/16"

**RED (+)** cable connects to GPO1 (Pin#25) or GPO2 (Pin#8)



**YELLOW (-)** cable connects to GPIO (Pin#9) ground cable

## Siren Detector Cable (Option)



**Special circuitry built within the cable allows Arbitrator Mobile Digital Video System to activate when police vehicle siren is turned on.**

**Overall length is 40 inches - minimum, 18 awg**

**Max Input Voltage (Siren leads to Arbitrator RTN lead): +/- 30V peak**

**Min input frequency: 400 Hz**

**Max output voltage: 15 VDC**

**Operating temp: 0°C to +65°C**

**Storage temp: -40°C to +85°C**

### Contact Information:

**LIND Electronics**

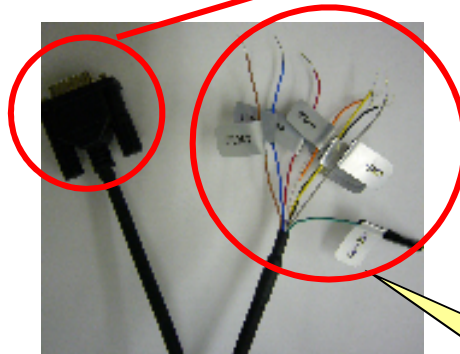
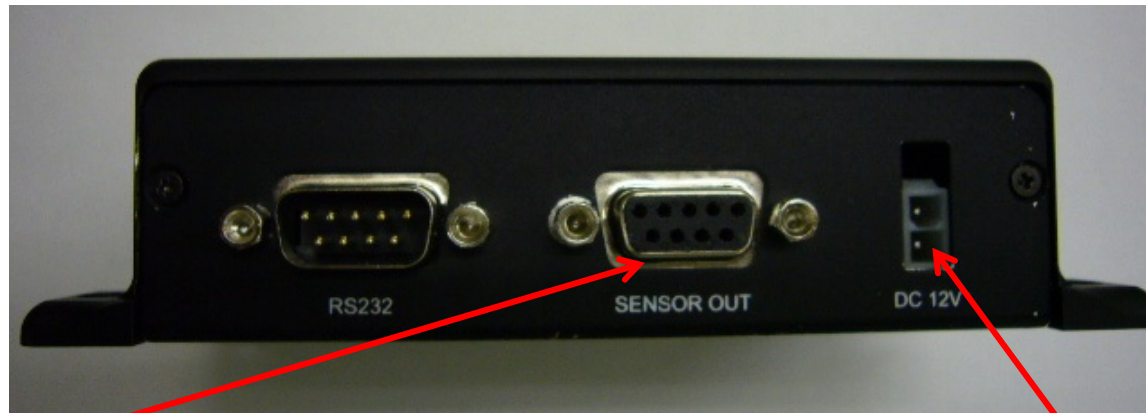
**<http://www.lindelectronics.com/>**

**Toll Free 1-800-659-5956**



# G-Force Sensor (Option) Connection

TGS-3DP



<Trigger Cable>



**Black (GND: -):**  
Connect to the Distribution Center

**Red (BATT: +):**  
Connect to the Distribution Center



<Power Cable>

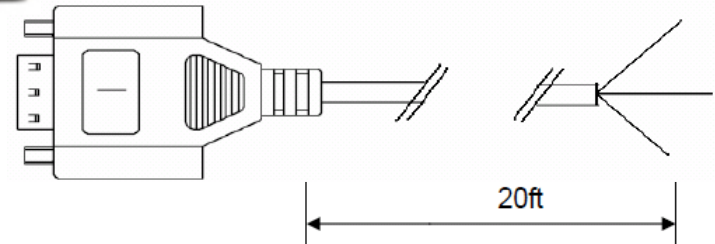


Connect each cable to the  
Distribution Center



## External GPIO Trigger Connection to G-Force Sensor (Option)

TGS-3DP



Pin #	Description	Cable Color
1	FLIP Out	White
2	RIGHT Out	Orange
3	LEFT Out	Blue
4	REAR Out	Red
5	FRONT Out	Brown
6	REC Out	Green
7	GND	Yellow
8	GND	Black
9	GND	Gray

If you have 5 trigger inputs available on Distribution Center, connect Pin#1-5 with the center so that VPU can start recording by the impact from any 6 directions with indication on screen of Arb360FE and/or Control Panel.

If you have only 1 trigger input available on Distribution Center, connect Pin #6 to start recording by the trigger regardless of which direction the impact comes from.

All GND(3 pins) should be connected.

## Battery Back Up Unit (Option)

The Lind Module provides a back up power source to the Arbitrator in the event of the loss of the primary DC voltage source. Uninterruptible operation is provided for momentary power losses during starting conditions and long-term power losses in the event of losing the main source permanently. The Battery Back-Up Module used with the Arbitrator video system can provide short term back up power during vehicle collisions or situations where the vehicle battery may become incapacitated.



The Toughbook Arbitrator is the next-generation Mobile Digital Video System combining state-of-the-art digital recording, and data-compression technologies to achieve the world's most advanced, reliable, and easiest-to-query incident documentation system from Panasonic.

- 35 Watts of back up power for approximately 10 minutes video operation.
- Operational over a wide temperature range.
- System alarm signal provided when back up mode is initiated.
- Back up battery good-bad indicator when ignition signal is present.
- Factory programmable system timer pulse available to segment stored data into smaller files.
- Two minute back up battery test run in six day intervals.
- Ten second back up battery status is run each time the ignition signal is applied.
- Back up battery float voltage monitoring.
- Three year temperature compensated life timer warning "End of Life" triggering the bad battery indicator.
- Dimensions: 6"L x 3.4"W x 3.4"T, Weight: 2.7#

**Lind Model #PAUPS1221-2462**

*Power Specialists*  
*for Mobile Computing*



[www.lindelectronics.com](http://www.lindelectronics.com)

Toll free 1-800-659-5956

Explore our web site link dedicated to Public Safety related adapters and cable products.

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Europe, EurAsia, MidEast, Africa contact: [Europe@lindelectronics.com](mailto:Europe@lindelectronics.com)

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## Battery Back Up Unit (Option) Connection

